

Title (en)  
DEVICE FOR IRRADIATING A TUMOR TISSUE

Title (de)  
VORRICHTUNG ZUR BESTRAHLUNG EINES TUMORGEWEBES

Title (fr)  
DISPOSITIF POUR IRRADIER UN TISSU TUMORAL

Publication  
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Application  
**EP 01984311 A 20010702**

Priority  
• DE 10031074 A 20000630  
• EP 0107553 W 20010702

Abstract (en)  
[origin: WO0207817A2] The invention relates to a device and method for irradiating a tumor tissue (3) of a patient (10) using an ion beam (2). To this end, the device comprises a deflecting device (1) of the ion beam (2) for effecting a slice by slice surface scanning of the tumor tissue (3) and comprises an ion beam energy control device for effecting a slice by slice depth scanning of the ion beam (2). An electromechanically driven ion retarding device (11, 12) is provided as a depth scanning adaptation device (5) for adapting the range of the ion beam (2) and exhibits a faster depth adaptation than the energy control device of an accelerator. The movement of a patient is monitored by a movement detection device (7) provided for detecting a temporal and local change in position of the tumor tissue (3) in a treatment room (8). A control device controls the deviation device (1) and the depth scanning adaptation device (5) for tracking the ion beam direction or the ion beam range while scanning the tumor tissue (3) in the instance of a temporal and local change in position of the tumor tissue (3) in the treatment room (8).

IPC 1-7  
**A61N 5/10**

IPC 8 full level  
**G21K 1/093** (2006.01); **A61N 5/00** (2006.01); **A61N 5/10** (2006.01); **G21K 3/00** (2006.01); **G21K 5/00** (2006.01); **G21K 5/04** (2006.01)

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Cited by  
USRE48047E; AU2005267063B2; EP2305349A1; US10925147B2; USRE48317E; US9730308B2; US7283307B2; WO2006012452A1; US9622335B2; US10368429B2; US10258810B2; US10456591B2; US9706636B2; US10675487B2; US9681531B2; US9962560B2; US10155124B2; US10254739B2; US9925395B2; US10279199B2; US10722735B2; US10646728B2; US10786689B2; US11213697B2; US11786754B2; US9661736B2; US9723705B2; US10434331B2; US11103730B2; US11717700B2; US7718982B2; US9950194B2; US10653892B2; US11291861B2; US11311746B2; US11717703B2

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